

REMARKS

As noted above, the Applicant appreciates the Examiner's thorough examination of the subject application.

Claims 1-20 are pending in the subject application. In the non-final Office Action mailed 26 January 2009, claims 1-20 were rejected on various statutory grounds, as described in further detail below. Claims 1 and 11 are amended herein. No new matter has been added.

Reconsideration and further examination of the subject application is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 102

Claims 1-5, 7, 9, 10, and 20

Concerning items 1-2 of the Office Action, claims 1-5, 7, 9, 10, and 20 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,480,596 to Okubo et al. ("Okubo"). Applicant traverses the rejection and requests reconsideration for the following reasons.

One requirement for a rejection under 35 U.S.C. § 102(b) is that the cited reference must teach each and every limitation as arranged in the claim(s) at issue. This requirement is not met in this situation, as will be explained. Claim 1 has been amended to clarify the type of optical tape produced by the claimed apparatus and to specify that pattern forming drum is seamless.

The independent claim subject to the instant rejection, i.e., amended claim 1, recites the following:

An apparatus for manufacturing pre-formatted thin tape linear optical data storage media including an elongated linear polymer layer and a substrate of about 4 μ to about 1000 μ , comprising:

a seamless drum mounted for rotation about a rotation axis, and including a circumferential outer surface having a seamless surface and a predetermined pattern of protrusions for embossing at least one pattern of

optically readable embossments in an elongated linear polymer layer rolled on the drum; and

a radiation source for causing the pattern of optically readable embossments of the elongated linear polymer layer to solidify prior to the embossments being removed from the protrusions of the outer surface of the drum.

[Emphasis Added]

In contrast, Okubo teaches making discs (CD's, etc.) and optical cards. It does not mention optical tape. Rather than the conventional injection molding process, Okubo describes a sheet-fed process, with the key and only "improvement" over prior art being the use of elastomeric layer in the stamper to reduce air bubbles during preformatting.

Okubo does not teach apparatus for forming patterns in thin optical tape as recited in amended claim 1, e.g., *by use of a seamless drum*. Okubo calls for the Ni stampers to be "adhered with an adhesive or mechanically fixed with screws or the like on the periphery of the elastic roll along its surface." See Okubo, col. 5, lines 34-36. While such a technique can work for sequentially punching out discs and cards, it will not work for optical tape (such as the kind produced by the apparatus of claim 1) because the pattern forming process used for the very thin substrate and polymer layer will not work with ANY significant perturbation to the surface of the embossing drum. The butted or screw stampers of Okubo will NOT work to create optical tape - because the Okubo stampers will cause disturbances (e.g., ridges, trenches) in the very thin linear tape optical media, which will cause print-through, sticking, blocking, etc. Okubo teaches nothing about making a seamless or near-seamless joint. The area where two such butted Okubo stampers come together will cause a severe discontinuity in the optical tape surface, which by nature must be continuous or near-continuous. This is not an issue for discs or cards produced by the Okubo apparatus, since the apparatus of Okubo can cut such surface irregularities from the sheet anyway.

Thus, Okubo fails to teach (or suggest) each and every limitation as arranged in amended claim 1, which is the base claim for the claims under rejection. Accordingly, Okubo forms and improper basis for a rejection of claims 1-5, 7, 9, 10, and 20 under 35 U.S.C. § 102(b). Applicant respectfully requests that the rejection be removed accordingly.

Claims 11-14 and 16

Concerning item 3 of the Office Action, claims 11-14 and 16 were rejected under 35 U.S.C. § 102(b) as being anticipated by International Patent Application Publication No. WO 97/14142 to Norden (“Norden”). Applicant traverses the rejection and requests reconsideration for the following reasons.

As noted previously, one requirement for a rejection under 35 U.S.C. § 102(b) is that the cited reference must teach each and every limitation as arranged in the claim(s) at issue. This requirement is not met in the case, as will be explained.

The independent claim subject to the rejection, i.e., claim 11, from which claims 12-14 and 16 depend, recites the following:

A method for manufacturing pre-formatted linear optical data storage media including an elongated linear polymer layer, comprising:

softening a surface of an elongated linear polymer layer;

embossing at least one pattern of optically readable embossments in the softened surface of the elongated linear polymer layer using a seamless drum having protrusions on a seamless surface; and

hardening the embossed surface of the elongated linear polymer layer prior to removing the linear polymer layer from the drum.

[Emphasis Added]

In contrast, Norden teaches a method of manufacturing read-only optical tape and includes steps of (a) providing a flexible substrate in the form of a tape, (b) providing an embossing registration layer on the substrate, (c) embossing the registration layer under pressure with the aid of a stamper, and (d) providing a protective film over the embossed registration layer. The invention and disclosure Norden concerns “optical tape”, but of the READ ONLY type. Norden does not address recordable or erasable OT, which is the type produced by Applicant’s claimed apparatus and methods.

At the very least, Norden fails to teach (or suggest) *using a seamless drum* for embossing, as recited in amended independent claim 11. Thus, Norden forms and improper basis for a rejection of claims 11-14 and 16 under 35 U.S.C. § 102(b). Applicant respectfully requests that the rejection be removed accordingly.

Claim Rejections – 35 U.S.C. § 103

Claim 6

Concerning items 4 of the Office Action, claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Okubo in view of Norden, both previously cited. Applicant traverses the rejection and requests reconsideration for the following reasons.

One requirement for a rejection under 35 U.S.C. § 103(a) is that the cited reference(s) must teach or suggest each and every limitation of the claim(s) at issue. Another requirement necessary for a rejection under 35 U.S.C. § 103(a) is that proper motivation must exist to combine or modify the teachings of the cited reference(s) in the way proposed by the Examiner for the rejection. Without acceding to the sufficiency or propriety adduced by the Examiner for the rejections, the present amendments to the claims is believed to render the rejection moot, for at least the reasons described previously regarding the deficiencies of Okubo relative to amended claim 1 and regarding Norden relative to amended claim 11. As claim 6, depends from amended claim 1, it is patentable for at least the same reasons.

Thus, the combination of Okubo and Norden, whether the references are considered alone or in combination, form an improper basis for a rejection of claim 6 under 35 U.S.C. § 103(a). Applicant therefore asks that the rejection be withdrawn accordingly.

Claim 8

Concerning item 5 of the Office Action, claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Okubo in view of U.S. Patent No. 6,162,519 to Takakuwa et al. (“Takakuwa”). Applicant traverses the rejection and requests reconsideration for the following reasons.

The deficiencies of Okubo relative to amended claim 1, the base claim for claim 8, have been described previously.

The secondary reference, Takakuwa, is directed to optical discs that are made from polyolefin polymers and related methods for making such discs. See, e.g., Takakuwa, col. 2, lines 17-26. The objective of Takakuwa appears to be improved birefringence using polyolefin substrates. Polyolefin films, however, are not stable in thing gages (e.g., they possess a taffy-like character. On this point, Applicant is willing to amend claim 1 to provide a negative limitation of “a non-polyolefin” material, should the Examiner suggest such an amendment.

In further contrast with Applicant’s claimed invention, e.g., as recited in amended claim 1, Takakuwa is particularly irrelevant in that: (1) it is only about improved manufacturing process for discs, (2) making a special polyolefin sheet for producing discs, (3) it concerns 2nd surface read/write and the substrate is designed to have low birefringence,(4) all of the claims of Takakuwa mention forming the disc on a molded polyolefin substrate. As noted previously, the polyolefin films of Takakuwa are not stable and do not work for thin optical tape.

Thus, the combination of Okubo and Takakuwa, whether the references are considered alone or in combination, form an improper basis for a rejection of claim 8 under 35 U.S.C. § 103(a). Applicant therefore asks that the rejection be withdrawn accordingly.

Claim 15

Concerning item 6 of the Office Action, claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Norden in view of Takakuwa, both cited previously. Applicant traverses the rejection and requests reconsideration for the following reasons.

The deficiencies Takakuwa relative to amended claim 11 are described previously. As claim 15 depends from claim 11, it is patentable for at least the same reasons. Norden, described previously, does not cure the deficiencies of Takakuwa relative to claim 11. Consequently, Applicant submits that the rejection of claim 15 under 35 U.S.C. § 103(a) over Norden in view of Takakuwa is improper and should be removed accordingly.

Claims 17-19

Concerning item 7 of the Office Action, claim 17-19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Norden in view of Okubo, both previously cited. Applicant traverses the rejection and requests reconsideration for the following reasons.

The deficiencies of both Norden and Okubo relative to claim 6 are described above. As claims 17-19 include limitations similar to those of claim 6, including, *inter alia*, “embossing at least one pattern of optically readable embossments in the softened surface of the elongated linear polymer layer using a seamless drum having protrusions on a seamless surface,” they are patentable for at least the same reasons. Consequently, Applicant submits that the rejection of claims 17-19 under 35 U.S.C. § 103(a) over Norden in view of Okubo is improper and should be removed accordingly.

Conclusion

For the foregoing reasons, Applicant submits that all of the claims under consideration in the subject application are in condition for allowance. A timely Notice of Allowance for the application is therefore earnestly solicited.

Should the Examiner have any questions, he is invited to call the undersigned. Authorization is hereby given to charge our deposit account no. 50-1133 for any fees required for the prosecution of the subject application.

Respectfully submitted,

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